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Kenneth T. Cartmell
Executive Director - Federal Regulatory

99-49

USWEST

May 3, 1999

Mr. Dale Hatfield
Chief, Office of Engineering and Technology
Federal Communications Commission
2000 M Street, NW, Room 480
Washington, DC 20554

RE: CC Docket No. 91-273
Final Service Disruption Report, Davenport, IA
DVNPIADT

Dear Mr. Hatfield:

On April 3, 1999, U S WEST Communications ("USWC") experienced a service outage in Davenport, IA. In accordance with the reporting rules, enclosed is USWC's Final Disruption Report for this outage.

Please contact me if you have questions concerning this report.

Sincerely,

Kenneth T. Cartmell

Attachment

cc: Mr. Richard Smith
Mr. Robert Kimball

Final Service Disruption Report

Reporting Company: U S WEST ("USW")

Location of Disruption: Davenport, IA (DVNPIADT)

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1. **Date and Time of Incident**:
April 3, 1999, at 2359 CST

2. Geographic Area Affected:
The eastern border of Iowa from Davenport to Keokuk was affected. The Central Offices (COs) impacted included Davenport West, Burlington, Ft. Madison, Keokuk, Muscatine and Walcott.

3. Estimated Number of Customers Affected:
60,100 customers were affected by the outage.

4A. Types of Services Affected:
911 Services were affected.

4B. 911 Service Affected:
The USW communities of Burlington, Ft. Madison, Keokuk, Buffalo, Walcott, Blue Grass, Montpelier, and Muscatine were isolated from 911.

5. Duration of Outage:
Service was fully restored at 0130 CST April 4, 1999. Total duration of the outage was 1 hour 31 minutes.

6. Estimated Number of Blocked Calls:
Based on like time, like day data, it is estimated that approximately 3,500 calls were blocked.

7A. Root Cause of the Incident:
The root cause of the incident was equipment failures caused by excessive temperatures.

An electrical cable fault resulted in a blown buss pot fuse at Mid America Energy's Substation F. The cable fault is believed to have been caused by a lightning strike. Substation F is located in a building owned by AT&T, which houses the Davenport Main CO.

The fault caused switching actions within the Substation which then caused both 13,200 Volt power feeds to the facility to be interrupted. There was total loss of power to everything fed by Substation F, including the air conditioning for the building housing the CO. The switching actions also created increased amperage at the air handling units, overloads caused motor starters to trip, and the USW toll facilities room lost cooling.

At 2359 CST, multiple alarms were received indicating failure of an OC48 system. Technicians were dispatched and the temperatures recorded in the CO were in excess of 90° F. A fan was placed on the OC48 and partial restoration was achieved by 0110 CST. By 0130 CST all systems were operational. Defective cards were also identified and replaced.

7B. Name and Type of Equipment:
NEC

7C. Specific Part of Network Affected:
Interoffice facility

8. Method(s) Used to Restore Service:
A cooling fan was placed on the equipment and defective cards were replaced.

9. Steps Taken to Prevent Recurrence of Outage:
The following steps have been or will be taken to prevent recurrence of the outage:

- The affected CO is in a leased area, in a building owned by AT&T. AT&T is responsible for all alarming in the building, but would not release detail indicative of the high temperatures. The USW Power Center has issued a request to add environmental alarms in the leased area, to be monitored by USW.

- Options for additional/diverse routing for 911 and message trunks will be investigated.

10A. Applicable Best Practice(s):
USW reviewed *Network Reliability: A Report to the Nation*, June 1993 and evaluated all recommendations and best practices by focus area. Based on the root cause analysis, the most appropriate focus areas are:

Section B - Signaling Network Systems
Reference 6.1.1 - Root Cause Analysis

E-911 Systems
Section F- 6.1.1 Diverse Routing of Interoffice Facilities
Reference 6.4 Network Management Center

Section E-Power
Reference 6.2 Standby Generators

10B. Best Practice(s) Used:
Section B - Signaling Network Systems
Reference 6.1.1 - Root Cause Analysis

E-911 Systems
Section F- 6.1.1 Diverse Routing of Interoffice Facilities
Reference 6.4 Network Management Center

Section E-Power
Reference 6.2 Standby Generators

10C. Analysis of Effectiveness of Best Practice(s):

Section B - Signaling Network Systems
Reference 6.1.1 - Root Cause Analysis

While this recommendation in the NRC document is specific to Signaling Networks, USW currently requires a root cause analysis on all significant network failures.

E-911 Systems
Section F-6.1.1 Diverse Routing of Interoffice Facilities

This recommendation describes the optimum configuration of diverse routes for 911 facilities. USW implements diversity wherever feasible.

Reference 6.4- Network Management Center

This recommendation describes the use of centralized network management centers to monitor the 911 network as a unique and separate entity from the rest of the network. USW does not have a NMC specifically monitoring 911, however, network traffic for 911 trunk groups is monitored in the two regional Network Management Centers. USW also has two Regional Network Reliability Operations Centers (NROC) whose responsibility is to monitor the health of the network through alarm indications on equipment and facilities. In addition, USW has also deployed two regional 911 Centers in Seattle, Washington and Minneapolis, Minnesota, whose primary responsibility is to work with 911 providers and the NROC to insure the reliability of this service.

Section E - Power
Reference 6.2 Standby Generators

This recommendation describes the Best Practices guiding the use of standby generators. USW has adopted these best practices. In this case all the power equipment, including the standby generator, were owned by and under the control of AT&T. When the single phasing condition occurred the increased amperage at the supply and return AHU (air handling unit) motor starters tripped on the overloads, causing loss of cooling to the USW toll facilities room.

Contact Person:

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